CLAIMS

1. A mineral glass having a composition, expressed in percentages by weight of oxides, consisting essentially of:

SiO_2 65 - 70

Al_2O_3 18 - 20.5

Li_2O 2.5 - 3.8

MgO 0.55 -1.5

ZnO 1.2 - 2.8

BaO 0 - 1.4

SrO 0 - 1.4

with BaO + SrO 0.4 - 1.4

with MgO + BaO + SrO 1.1 - 2.3

Na_2O 0 - < 1

K_2O 0 - < 1

with $Na_2O + K_2O$ 0 - < 1

with $\frac{2.8Li_2O + 1.2ZnO}{5.2MgO} > 1.8$

TiO_2 1.8 - 3.5

ZrO_2 0.8 - 2.5

with $2.2 < \frac{TiO_2}{ZrO_2} < 4.5$;

and, optionally, an effective, non-excess amount of at least one fining agent.

2. The mineral glass according to claim 1, wherein $2.3 < \frac{TiO_2}{ZrO_2} < 4.5$.

3. The mineral glass according to claim 1, the composition of which further contains an effective amount of at least one coloring agent selected from CoO, Cr_2O_3, Fe_2O_3, MnO_2, NiO, V_2O_5 and CeO_2.

4. The mineral glass according to claim 1, the composition of which further contains 0.03 to 1 % by weight of V_2O_5 with

$3.8\ \% \leq TiO_2 + ZrO_2 + 5V_2O_5 \leq 6\ \%$.

5. The mineral glass according to claim 1 which does not further contain any coloring agent, wherein the Al_2O_3 content is between 19.8 and 20.5 % and ZrO_2 content is between 1.2 and 2.5 %.

6. A process for preparing a glass-ceramic article containing a solid solution of β-quartz as the predominant crystalline phase, characterized in that it essentially comprises the following successive steps:

a) melting a glass, or melting a filler, a precursor of such a glass, which has a composition, expressed in percentages by weight of oxides, consisting essentially of:

SiO_2	65 - 70
Al_2O_3	18 - 20.5
Li_2O	2.5 - 3.8
MgO	0.55 -1.5
ZnO	1.2 - 2.8
BaO	0 - 1.4
SrO	0 - 1.4
with	BaO + SrO 0.4 - 1.4
with	MgO + BaO + SrO 1.1 - 2.3
Na_2O	0 - < 1
K_2O	0 - < 1
with	$Na_2O + K_2O$ 0 - < 1
with	$\frac{2.8Li_2O + 1.2ZnO}{5.2MgO} > 1.8$
TiO_2	1.8 - 3.5
ZrO_2	0.8 - 2.5
with	$2.2 < \frac{TiO_2}{ZrO_2} < 4.5$;

and, optionally, an effective, non-excess amount of at least one fining agent;

b) cooling the melted glass obtained to a temperature lower than its conversion interval and simultaneously shaping it into the shape of the final article sought after;

c) increasing the temperature of the glass shape obtained, at a rate of 50 to 80°C/minute up to a temperature in the range 670 - 800°C;

d) keeping said glass article within this temperature range between 670 and 800°C, for 15 to 25 minutes, in order to develop grains or nuclei within it;

e) increasing the temperature of said glass article, which is now nucleated, at a rate sufficient in order to bring it, in 15 - 30 minutes, into the temperature interval of 900 - 980°C;

f) keeping said nucleated glass article in this temperature interval of 900 - 980°C, for 10 to 25 minutes, so as to make crystals of β-quartz solid solution grow on these grains or nuclei;

g) rapidly cooling the crystallized article to ambient temperature.

7. The process according to claim 6, characterized in that the total duration for implementing steps b) to f) does not exceed about 2 hours.

8. The process according to claim 7, characterized in that the total duration for implementing steps b) to f) does not exceed about 1 hour.

9. A process for preparing a glass-ceramic article containing a solid solution of β-spodumene as the predominant crystalline phase, characterized in that it essentially comprises the following successive steps a) to g):

a) melting a glass, or melting a filler, a precursor of a glass, which has a composition, expressed in percentages by weight of oxides, consisting essentially of:

SiO_2	65 - 70
Al_2O_3	18 - 20.5
Li_2O	2.5 - 3.8
MgO	0.55 -1.5
ZnO	1.2 - 2.8
BaO	0 - 1.4
SrO	0 - 1.4
with	BaO + SrO 0.4 - 1.4
with	MgO + BaO + SrO 1.1 - 2.3
Na_2O	0 - < 1
K_2O	0 - < 1
with	$Na_2O + K_2O$ 0 - < 1

with $\frac{2.8Li_2O + 1.2ZnO}{5.2MgO} > 1.8$

TiO_2 1.8 - 3.5

ZrO_2 0.8 - 2.5

with $2.2 < \frac{TiO_2}{ZrO_2} < 4.5$;

and, optionally, an effective, non-excess amount of at least one fining agent;

b) cooling the melted glass obtained to a temperature lower than its conversion interval and simultaneously shaping it into the shape of the final article sought after;

c) increasing the temperature of the glass shape obtained, at a rate of 50 to 80°C/minute up to a temperature in the range 670 - 800°C;

d) keeping said glass article within this temperature range between 670 and 800°C, for 15 to 25 minutes, in order to develop grains or nuclei within it;

e) increasing the temperature of said glass article, which is now nucleated, at a rate sufficient in order to bring it, in 15 - 30 minutes, into the temperature interval of 1,050 - 1,200°C;

f) keeping said nucleated glass article in this temperature interval of 1,050 - 1,200°C, for 10 to 25 minutes, so as to make crystals of β-quartz solid solution grow on these grains or nuclei;

g) rapidly cooling the crystallized article to ambient temperature.

10. The process according to claim 9, characterized in that the total duration for implementing steps b) to f) does not exceed about 2 hours.

11. The process according to claim 10, characterized in that the total duration for implementing steps b) to f) does not exceed about 1 hour.

12. A glass-ceramic article having a composition, expressed in percentages by weight of oxides, consisting essentially of:

SiO_2 65 - 70

Al_2O_3 18 - 20.5

Li_2O 2.5 - 3.8

MgO 0.55 -1.5

ZnO	1.2 - 2.8
BaO	0 - 1.4
SrO	0 - 1.4
with	BaO + SrO 0.4 - 1.4
with	MgO + BaO + SrO 1.1 - 2.3
Na_2O	0 - < 1
K_2O	0 - < 1
with	$Na_2O + K_2O$ 0 - < 1
with	$\frac{2.8Li_2O + 1.2ZnO}{5.2MgO} > 1.8$
TiO_2	1.8 - 3.5
ZrO_2	0.8 - 2.5
with	$2.2 < \frac{TiO_2}{ZrO_2} < 4.5$;

and, optionally, an effective, non-excess amount of at least one fining agent.

13. The glass-ceramic article of according to claim 12, wherein $2.3 < \frac{TiO_2}{ZrO_2} < 4.5$.

14. The article according to claim 12 which is a cooktop plate, a cookware, a microwave oven bottom tray, a woodstove window, a fire protection door, or a fire protection window.